ADITHYA SWAMINATHAN

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EDUCATION

University of Illinois, Urbana-Champaign, Champaign, IL — Class of 2024
Bachelor of Arts and Science in Computer Science & Mathematics

GPA: 4.0
Achievements: LAS James Scholar, LAS Haan Scholarship Recipient
Relevant Coursework: Software Design Studio, Discrete Structures

South Brunswick High School, South Brunswick, NJ — Class of 2020

GPA: 4.47/5.00 (WEIGHTED)
Achievements: National AP Scholar, National Commended Student Award, National Honors Society Member, Math Honors Society, French Honors Society, High Honor Roll Member
Relevant Coursework: Differential Equations, Linear Algebra, Modern Physics, Data Structures, Mobile App Development, AP Computer Science, Real Analysis, Complex Analysis, Multivariable Calculus, AP Physics C

EXPERIENCE

CS 126 Course Assistant, Champaign, IL | *January 2021 - Present*

- Assisted with the retooling of design and infrastructure of the course
- Worked in tandem with the professor in order to update course projects
- Held weekly code review sessions with students and ensured more production-level code
- Occasionally held office hours to work with students on issues with the projects

Storming Robots, Branchburg, NJ | *June 2018 - July 2019*

- Gave in-person instruction to 10 VEX RobotC students aged 9-11
- Taught two algorithm-based C/C++ courses to a total of 35 kids aged 12-16
- Assembled and administered lesson plans for both courses to students

Coding Camp, South Brunswick, NJ | *June 2018 - July 2018*

- Introduced children in neighborhood to rudimentary concepts in C
- Regularly sent reports of each student's progress to parents
- Focused on tracking each student's weaknesses and addressing them in class

LEADERSHIP

BA Coding Club, Brunswick Acres Elementary School, NJ | *November 2018 - March 2019*

- Organized after-school club focused on teaching basic concepts of programming
- Taught Scratch programming language to children at former elementary school
- Made sure to field questions and alleviate concerns for each student

PROJECTS

InfiniteWellSimulator (C++)

- Uses Quantum Physics theories to provide an in-depth experience akin to "particle in a box" simulation
- Graphs spatial and momentum wavefunctions for quantum particle in question
- Provides user control over all aspects of the simulation (from particle specs to lighting of simulation)
- Utilizes Cinder open-source library as source for GUI

ZeroRobotics (C)

- Manipulated angular velocity and acceleration of bot to program hooking function for interlocking two SPHERES satellites by tracking Euler angles and quaternions
- Performed multiple rounds of iterative testing to perfect SPHERE's movement using Djikstra's Algorithm
- Worked in real time aboard the International Space Station

LandmarkHelper (Java - Android Studio)

- Able to recognize landmarks based on the picture fed into the system by implementing Cloud Vision API
- Authenticates user, and stores landmarks in user's very own dataset using Firebase
- Utilizes Geolocation API to give activities to explore near landmark

ACTIVITIES AND AWARDS

4th Place in International Alliance Finals, Programmer for Team Quark Charm, NASA + MIT's ZeroRobotics Competition
Co-Captain, Team 750B, School VEX Robotics Team
6th Place in Regionals, Lead Programmer for Team F.O.B, VEX RoboCup Junior Arduino Soccer Competition

SKILLS

Languages: Java, C/C++, HTML, CSS, JavaScript, Python, SQL, LaTeX
Cloud Services: Firebase, Google Cloud Vision API, Google Geolocation API
Tools: Android Studio, Visual Studio Code, Visual Studio, Eclipse, Atom, IntelliJ, Git, CLion
Firmwares: Arduino